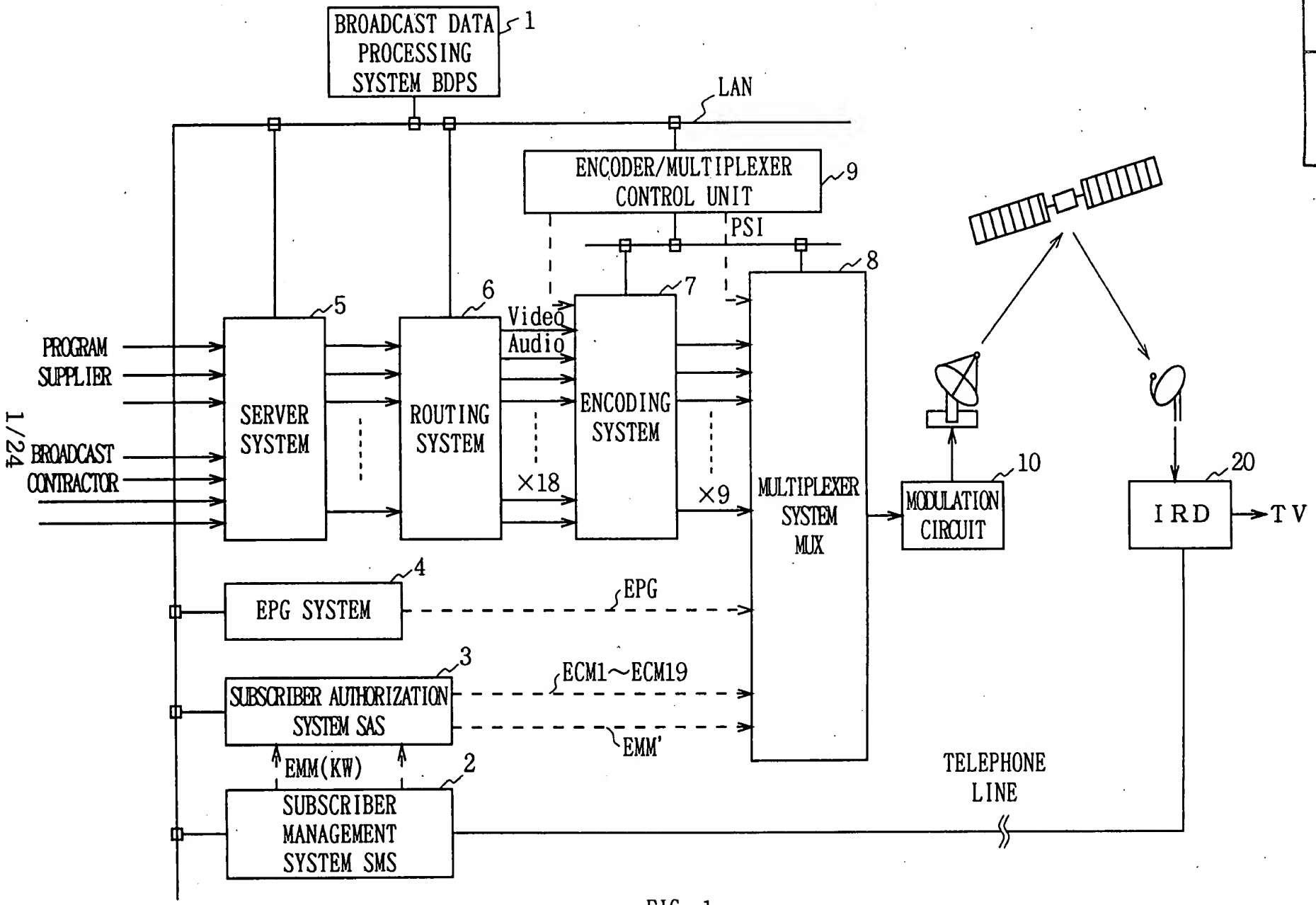

FIG. 1

Program number	Video	Main Audio	Sub Audio	Private
1	Ks1		---	---
2	Ks2		Ks3	Ks4
3	Ks5	Ks6	---	---
4	Ks7	Ks8	Ks9	Ks10
5	Ks11			
6	Ks12		---	---
7	Ks13			Ks14
8	Ks15			
9	Ks16	Ks17	Ks18	Ks19

FIG. 2

PID VALUE	INFORMATION RECORDED IN A PACKET
0x0000	PAT
0x0001	CAT
0x0002~0x000F	Reserved
0x0010	NIT、ST
0x0011	SDT、BAT、ST
0x0012	EIT、ST
0x0013	RST、ST
0x0014	TDT
0x0015~0x001F	Reserved
0x0020~0x1FFE	PMT,VIDEO/AUDIO DATA STREAM
0x1FFF	Null Packet

FIG. 3

PID TABLE

PACKET TYPE	PID VALUE	SCRAMBLE KEY
PATPACKET	0×0000 FIXED VALUE	---
•	•	
•	•	
•	•	
PMT1PACKET	0×0100	---
PMT2PACKET	0×0101	---
•	•	
•	•	
•	•	
•	•	
ECM1PACKET	0×0300	---
•	•	
•	•	
ECM2PACKET	0×0351	---
ECM2PACKET	0×0352	---
ECM3PACKET	0×0353	---
ECM4PACKET	0×0354	---
•	•	
•	•	
•	•	
•	•	
Video[1]PACKET	0×0500	Ks1
Main_Audio[1]PACKET	0×0501	Ks1
Video[2]PACKET	0×0502	Ks2
Main_Audio[2]PACKET	0×0503	Ks2
Sub_Audio[2]PACKET	0×0504	Ks3
Private[2]PACKET	0×0505	Ks4
•	•	
•	•	
•	•	
•	•	
CATPACKET	0×0001 (FIXED VALUE)	---
•	•	
•	•	
•	•	
•	•	
EMMPACKET	0×0700	---
•	•	
•	•	
•	•	

FIG. 4

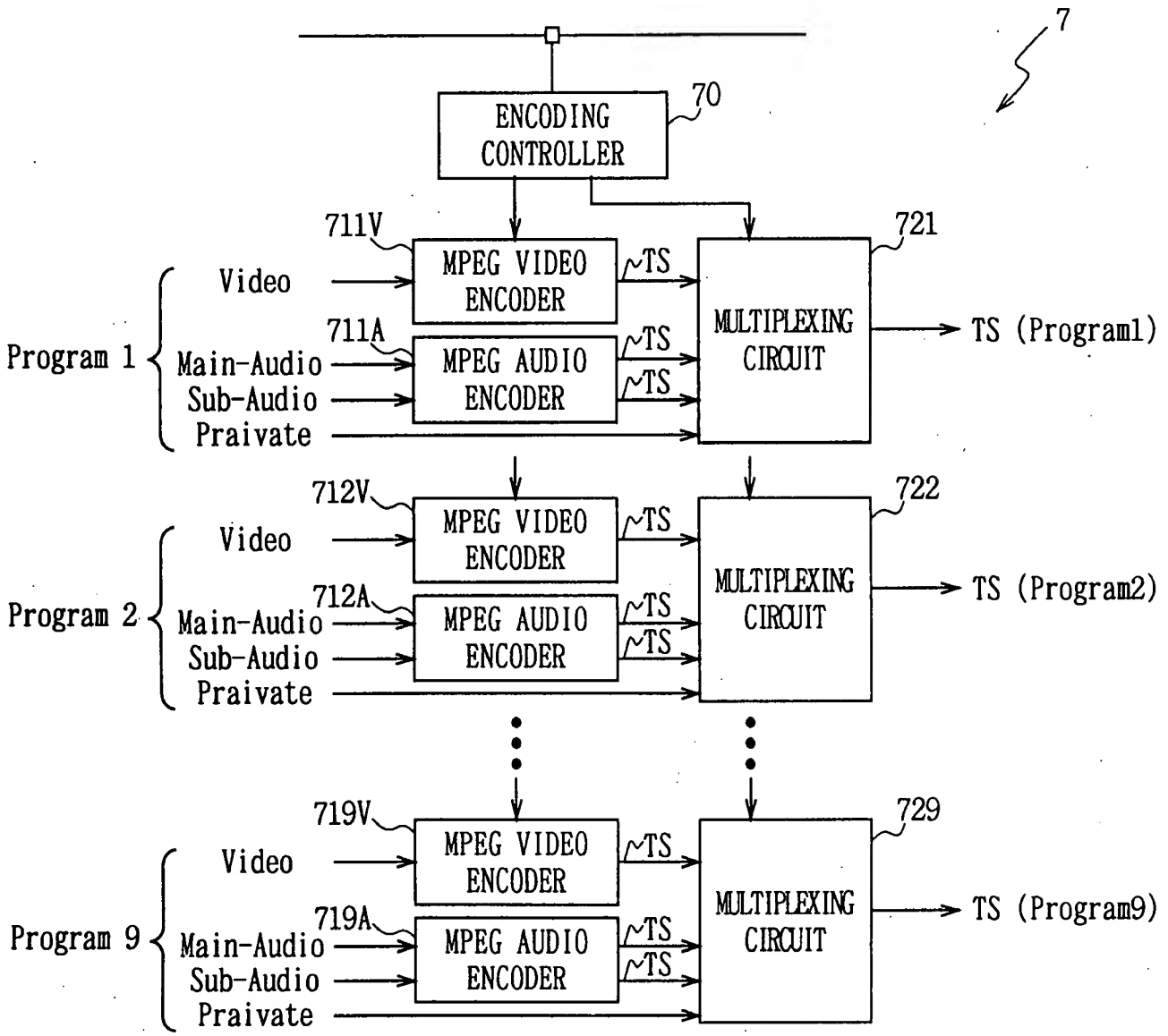

FIG. 5

SYNTAX	NUMBER OF BITS	MNEMONIC
transport packet(){		
sync_byte	8	bslbf
transport_error_indicator	1	bslbf
payload_unit_start_indicator	1	bslbf
transport_priority	1	bslbf
PID	13	uimsbf
transport_scrambling_control	2	bslbf
adaptation_field_control	2	bslbf
continuity_counter	4	uimsbf
if(adaptation_field_control==' || adaptation_field_control=='11'{		
adaptation filed()		
}		
if(adaptation_field_control==' || adaptation_field_control=='11'{		
for(i=0;i<N;i++){		
data_byte	8	bslbf
}		
}		
}		

FIG. 6

SYNTAX	NUMBER OF BITS	MNEMONIC
adaptation_field(){		
adaptation_filed_length	8	uimsbf
if(adaptation_field_length>0){		
discontinuity_indicator	1	bslbf
random access_indicator	1	bslbf
elementary_stream_priority_indicator	1	bslbf
PCR_flag	1	bslbf
OPCR_flag	1	bslbf
splicing_point_flag	1	bslbf
transport_private_data_flag	1	bslbf
adaptation_field_extension_flag	1	bslbf
if(PCR_flag=='1'){		
program_clock_reference_base	33	uimsbf
reserved	6	bslbf
program_clock_reference_extension	9	uimsbf
}		
if(OPCR_flag=='1'){		
original_program_clock_reference_base	33	uimsbf
reserved	6	bslbf
original_program_clock_reference_extension	9	uimsbf
}		
if(splicing_point_flag=='1'){		
splice_countdown	8	tcimsbf
}		
if(transport_private_data_flag=='1'){		
transport_private_data_length	8	uimsbf
for(i=0;i<transport_private_data_length;i++;){		
private_data_byte	8	bslbf
}		
}		
if(adaptation_field_extension_flag=='1'){		
adaptation_field_extension_length	8	uimsbf
ltw_flag	1	bslbf
piecewise_rate_flag	1	bslbf
seamless_splice_flag	1	bslbf

FIG. 7

```
            reserved                                    5       bslbf
            if(ltw_flag=='1'){
                ltw_valid_flag                          1       bslbf
                ltw_offset                             15       uimsbf
            }
            if(piecewise_rate_flag=='1'){
                reserved                                2       bslbf
                piecewise_rate                         22       uimsbf
            }
            if(seamless_splice_flag=='1'){
                splice_type                             4       bslbf
                DTS_next_AU[32..30]                     3       bslbf
                market_bit                              1       bslbf
                DTS_next_AU[29..15]                    15       bslbf
                marker_bit                              1       bslbf
                DTS_next_AU[14..0]                     15       bslbf
                marker_bit                              1       bslbf
            }
            for(i=0;i<N;i++){
                reserved                                8       bslbf
            }
        }
        for(i=0;i<N;i++){
            stuffing_byte                               8       bslbf
        }
    }
}
```

FIG. 8

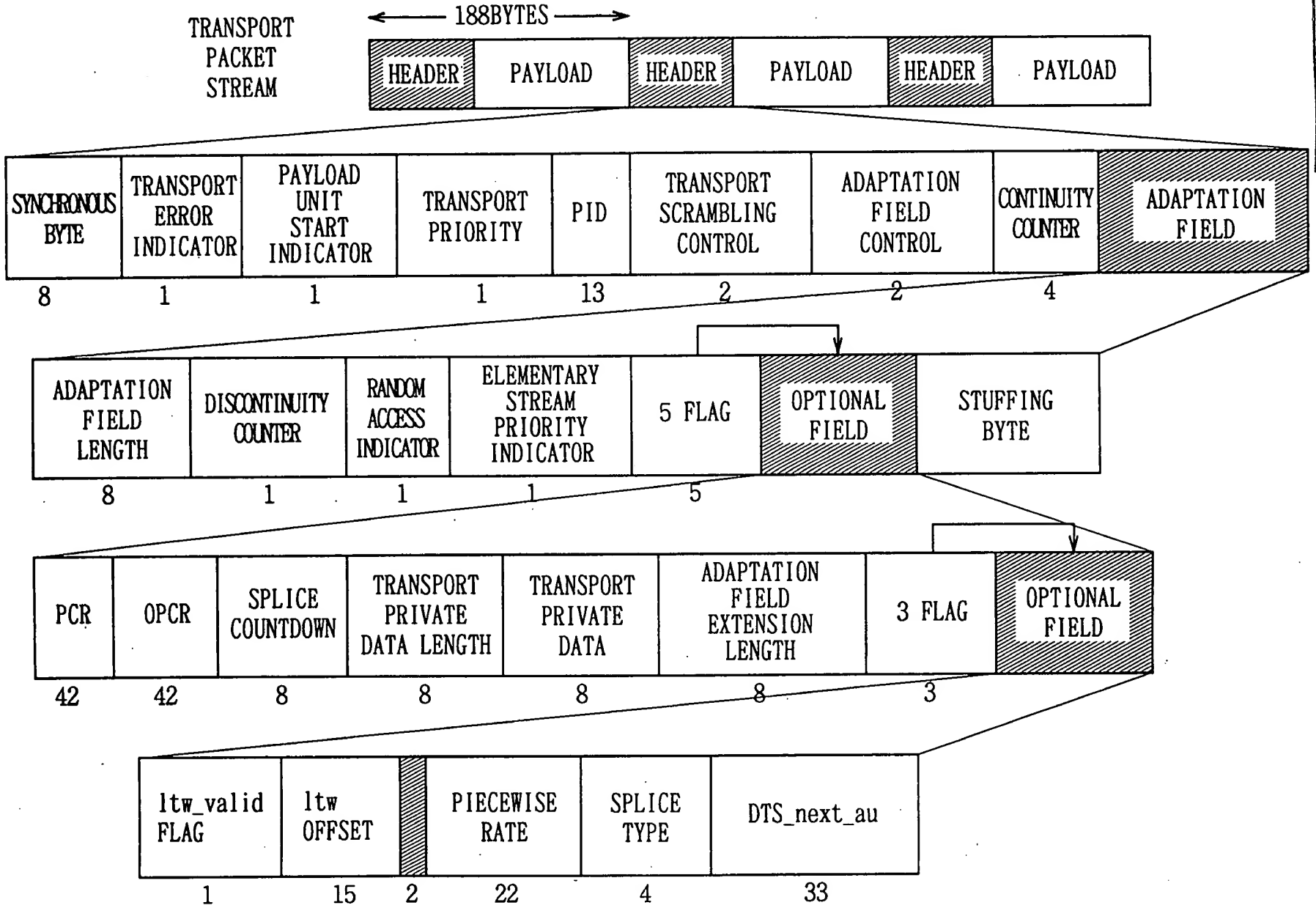

FIG. 9

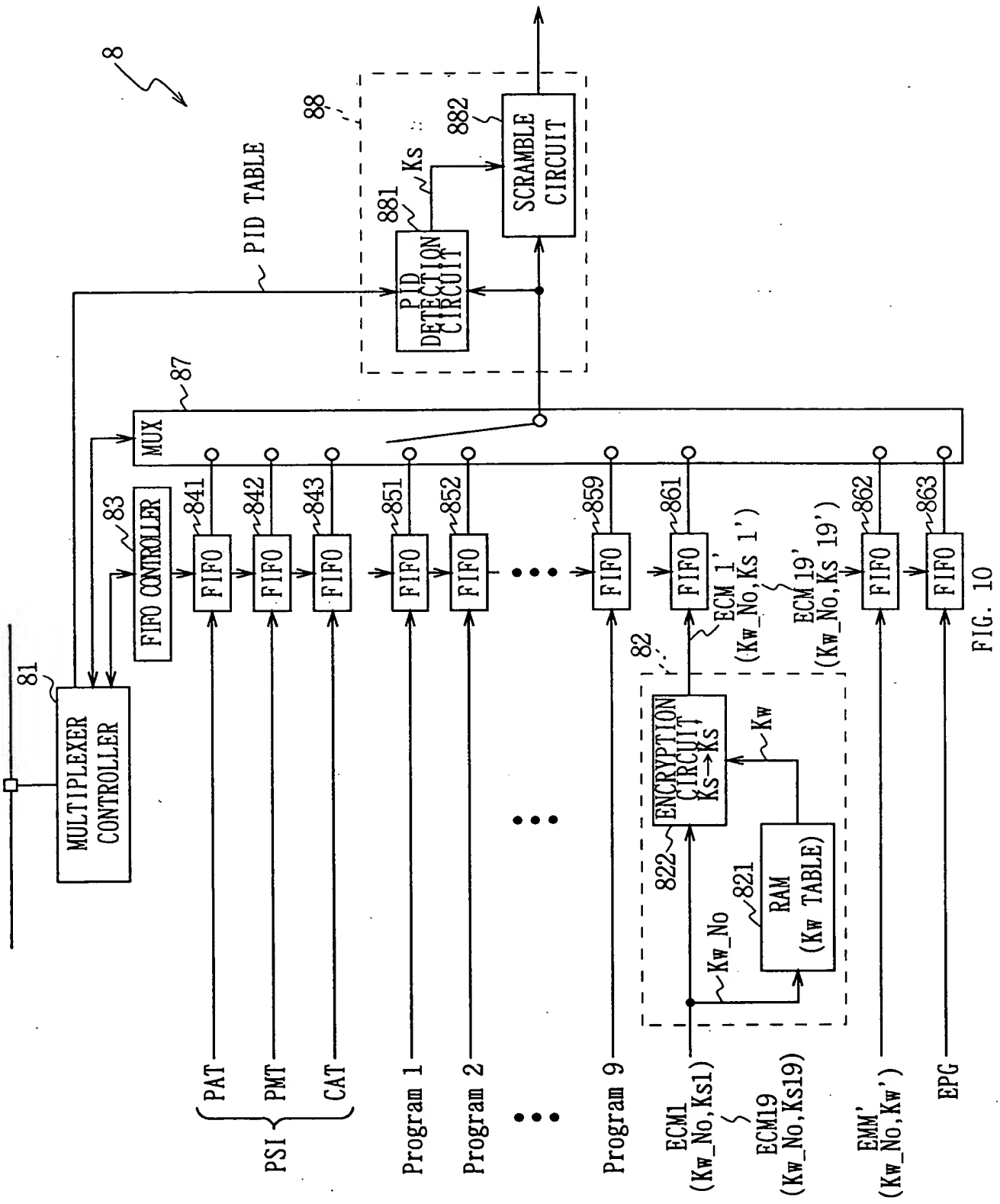

FIG. 10

STRUCTURE NAME	ASSIGNED PID #	DESCRIPTION
PROGRAM ASSOCIATION TABLE (PAT)	0x00	ASSIGNS PROGRAM NUMBERS AND PROGRAM MAP TABLE PIDs
PROGRAM MAP TABLE (PMT)	ASSIGNED BY PAT	SPECIFIES PIDs FOR COMPONENTS OF MORE THAN ONE PROGRAMS
NETWORK INFORMATION TABLE (NIT)	ASSIGNED BY PAT	PHYSICAL NETWORK PARAMETERS SUCH AS FDM FREQUENCIES AND REPEATER NUMBERS
CONDITIONAL ACCESS TABLE (CAT)	0x01	ASSIGNS UNIQUE PID VALUES TO MORE THAN ONE (PRIVATE) EMM STREAMS, RESPECTIVELY

FIG. 11

SYNTAX	NUMBER OF BITS	MNEMONIC
program_association section() {		
table_id	8	uimsbf
section_syntax_indicator	1	bslbf
'0'	1	bslbf
reserved	2	bslbf
section_length	12	uimsbf
transport_stream_id	16	uimsbf
reserved	2	bslbf
version_number	5	uimsbf
current_next_indicator	1	bslbf
section_number	8	uimsbf
last_section_number	8	uimsbf
for(i=0; i<N;i++) {		
program_number	16	uimsbf
reserved	3	bslbf
if(program number == '0')		
{		
network_PID	13	uimsbf
}		
else {		
program_map_PID	13	uimsbf
}		
}		
CRC32	32	rpchof
}		

FIG. 12

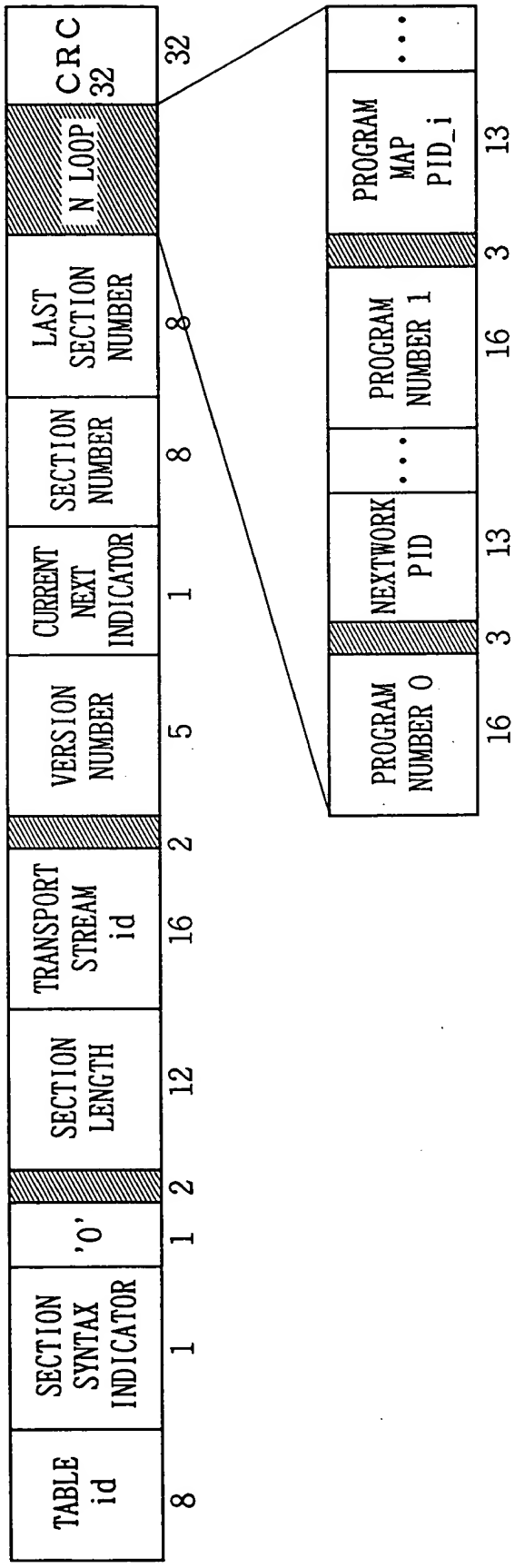

FIG. 13

VALUE	DESCRIPTION
0x00	PROGRAM ASSOCIATION SECTION
0x01	CONDITIONAL ACCESS SECTION (CA SECTION)
0x02	PROGRAM MAP SECTION
0x03-0x3F	ITU-T RECOMMENDATION H.222.0 | ISO/IEC 13818 RESERVED
0x40-0xFE	USER PRIVATE
0xFF	INHIBITED

FIG. 14

SYNTAX	NUMBER OF BITS	MNEMONIC
TS_program_map_section() {		
table_id	8	uimsbf
section_syntax_indicator	1	bslbf
'0'	1	bslbf
reserved	2	bslbf
section_length	12	uimsbf
program_number	16	uimsbf
reserved	2	bslbf
version_number	5	uimsbf
current_next_indicator	1	bslbf
section_number	8	uimsbf
last_section_number	8	uimsbf
reserved	3	bslbf
PCR_PID	13	uimsbf
reserved	4	bslbf
program_info_length	12	uimsbf
for(i=0; i<N;i++) {		
descriptor()		
}		
for(i=0; i<N;i++) {		
stream_type	8	uimsbf
reserved	3	bslbf
elementary_PID	13	uimsbf
reserved	4	bslbf
ES_info_length	12	uimsbf
for(i=0; i<N2; i++) {		
descriptor()		
}		
}		
CRC32	32	rpchof
}		

FIG. 15

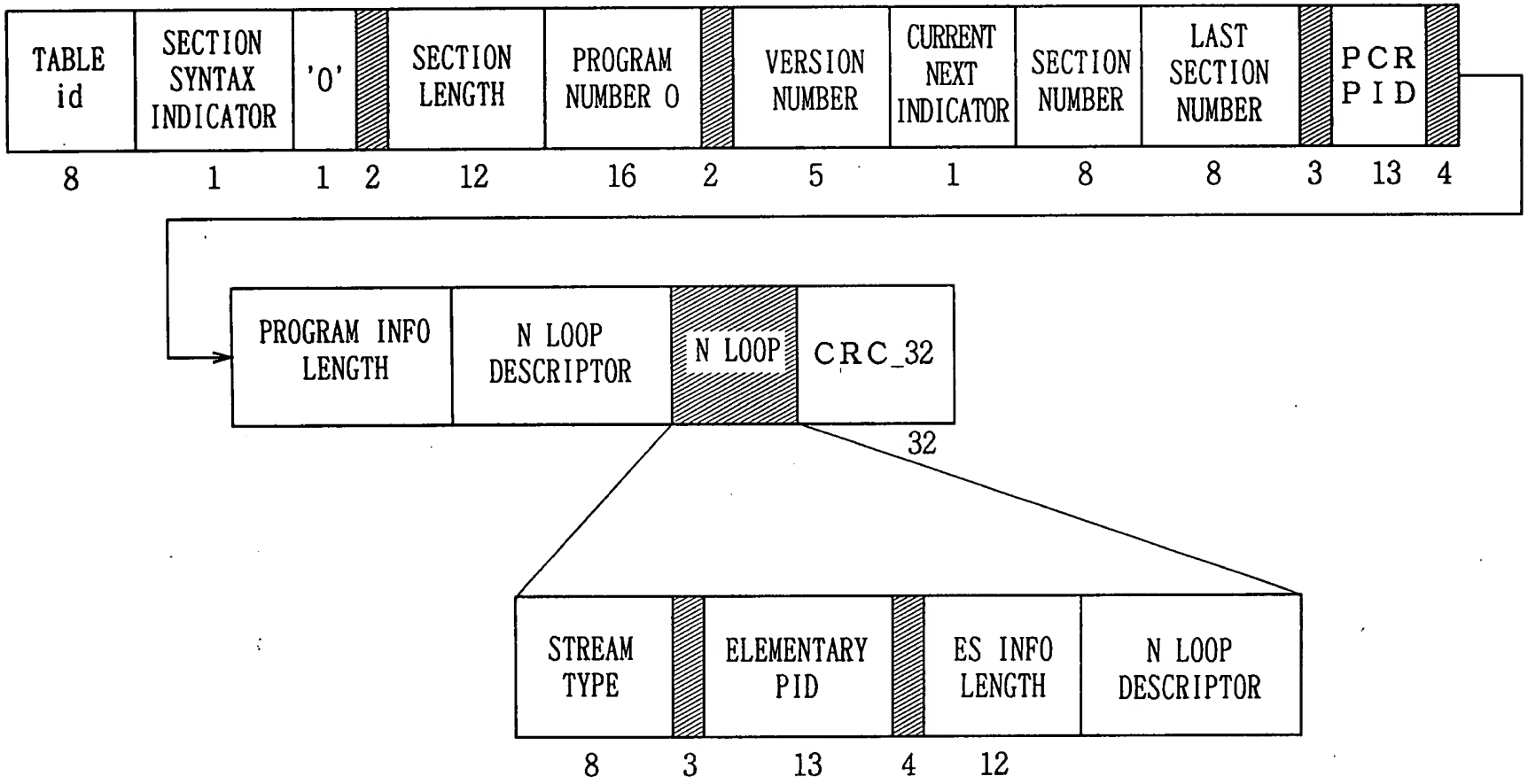

FIG. 16

SYNTAX	NUMBER OF BITS	MNEMONIC
CA_section() {		
table_id	8	uimsbf
section_syntax_indicator	1	bslbf
'0'	1	bslbf
reserved	2	bslbf
section_length	12	uimsbf
reserved	18	bslbf
version_number	5	uimsbf
current_next_indicator	1	bslbf
section_number	8	uimsbf
last_section_number	8	uimsbf
for(i=0; i<N;i++) {		
descriptor()		
}		
CRC32	32	rpchof
}		

FIG. 17

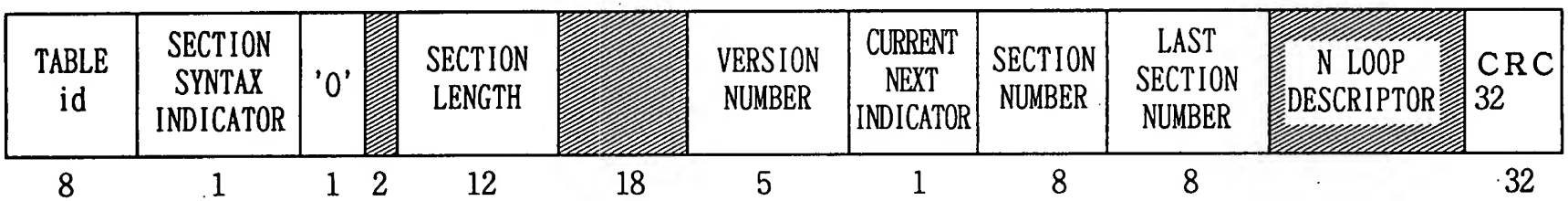

FIG. 18

SYNTAX	NUMBER OF BITS	MNEMONIC
CA_descriptor() {		
descriptor_tag	8	uimbf
descriptor_length	8	uimsbf
CA_system_ID	16	uimsbf
reserved	3	bslbf
CA_PID	13	uimsbf
for(i=0; i<N;i++) {		
private_data_byte	8	uimsbf
}		
}		

FIG. 19

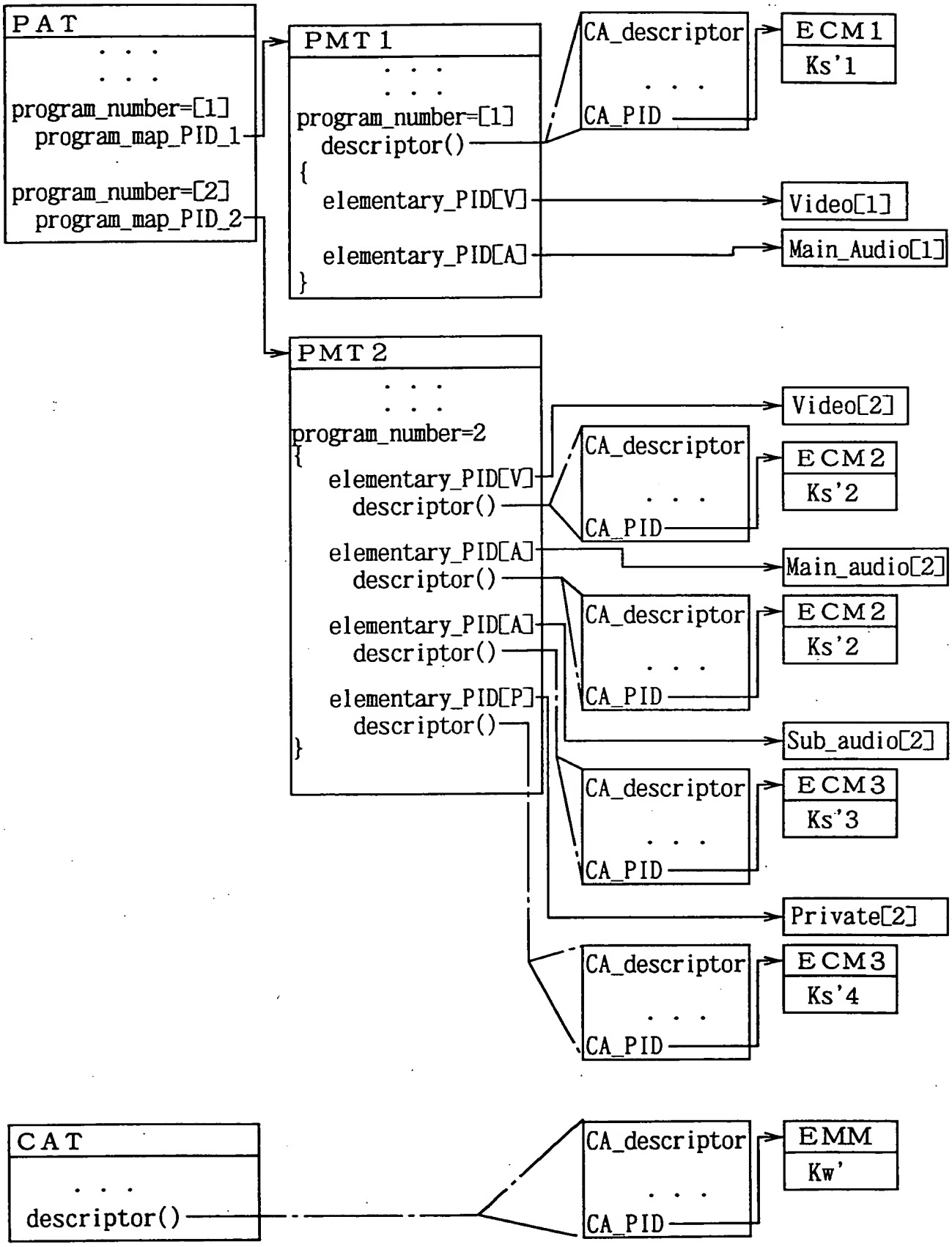

FIG. 20

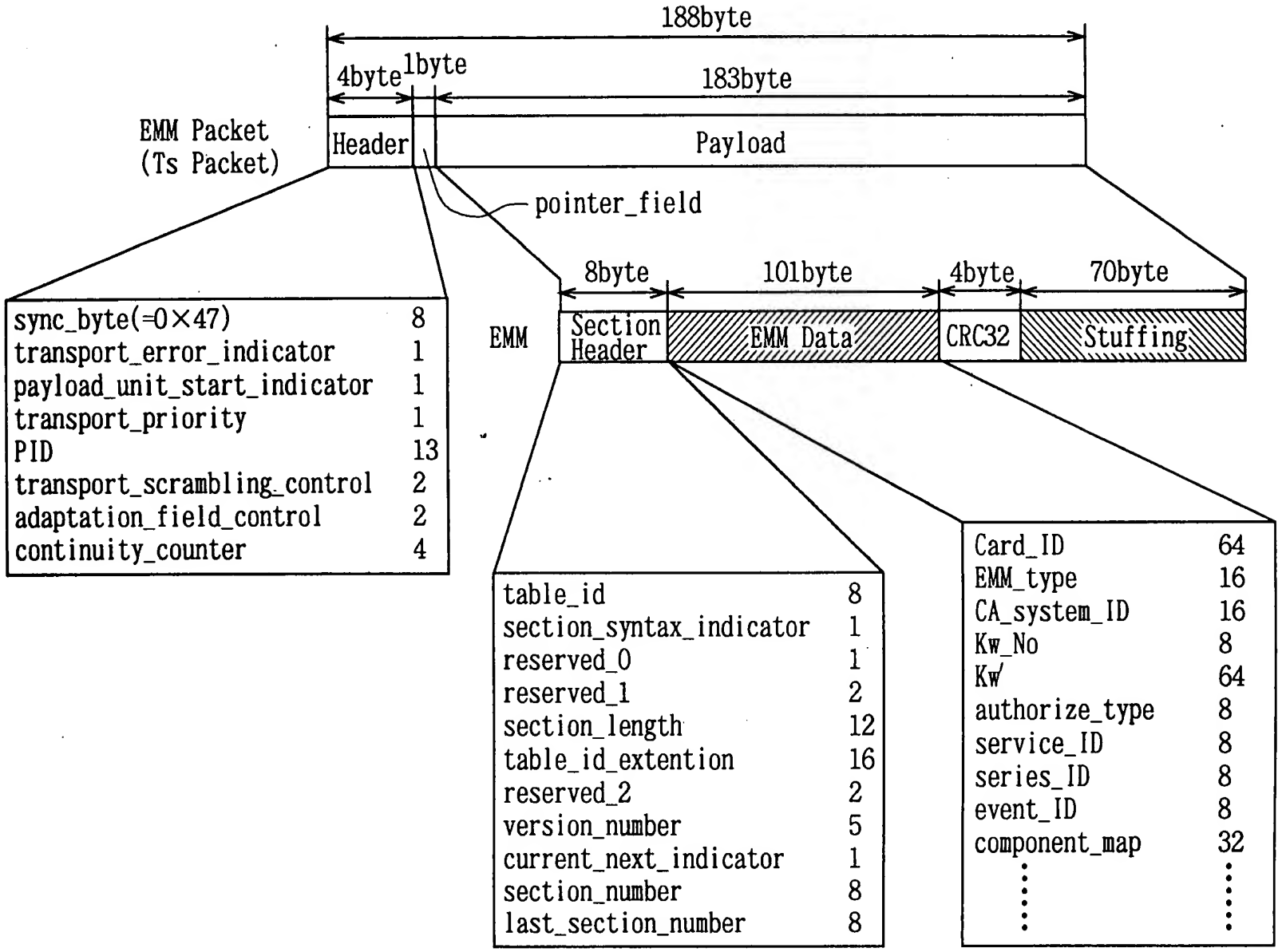
188byte
4byte
1byte
183byte
EMM Packet
(Ts Packet)
Header
Payload
pointer_field
8byte
101byte
4byte
70byte
EMM
Section Header
EMM Data
CRC32
Stuffing
sync_byte(=0×47) 8
transport_error_indicator 1
payload_unit_start_indicator 1
transport_priority 1
PID 13
transport_scrambling_control 2
adaptation_field_control 2
continuity_counter 4
table_id 8
section_syntax_indicator 1
reserved_0 1
reserved_1 2
section_length 12
table_id_extention 16
reserved_2 2
version_number 5
current_next_indicator 1
section_number 8
last_section_number 8
Card_ID 64
EMM_type 16
CA_system_ID 16
Kw_No 8
Kw 64
authorize_type 8
service_ID 8
series_ID 8
event_ID 8
component_map 32

FIG. 21

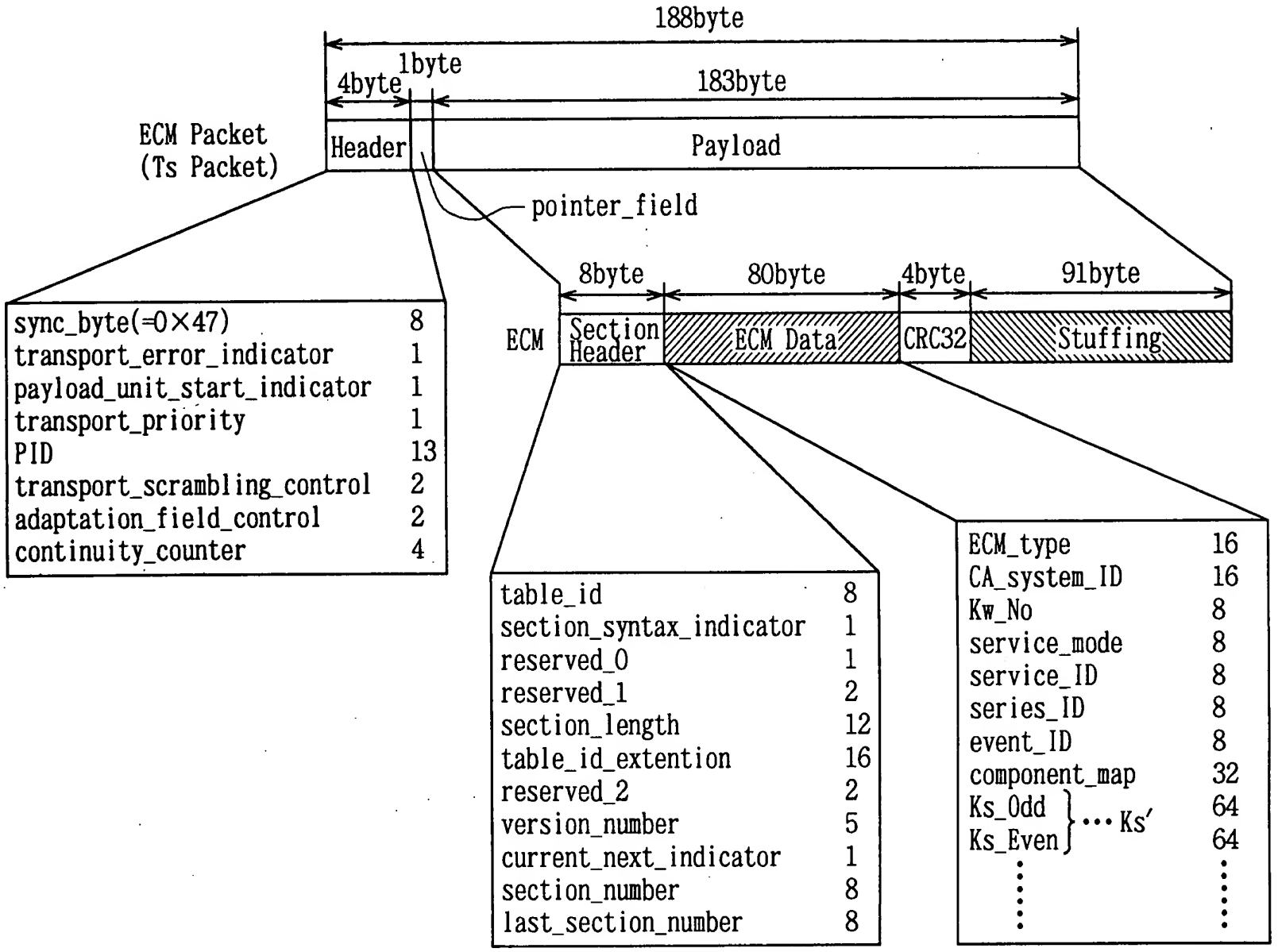
188byte
4byte
1byte
183byte
ECM Packet
(Ts Packet)
Header
Payload
pointer_field
8byte
80byte
4byte
91byte
ECM
Section Header
ECM Data
CRC32
Stuffing
sync_byte(=0×47) 8
transport_error_indicator 1
payload_unit_start_indicator 1
transport_priority 1
PID 13
transport_scrambling_control 2
adaptation_field_control 2
continuity_counter 4
table_id 8
section_syntax_indicator 1
reserved_0 1
reserved_1 2
section_length 12
table_id_extention 16
reserved_2 2
version_number 5
current_next_indicator 1
section_number 8
last_section_number 8
ECM_type 16
CA_system_ID 16
Kw_No 8
service_mode 8
service_ID 8
series_ID 8
event_ID 8
component_map 32
Ks_Odd ... Ks' 64
Ks_Even 64

FIG. 22

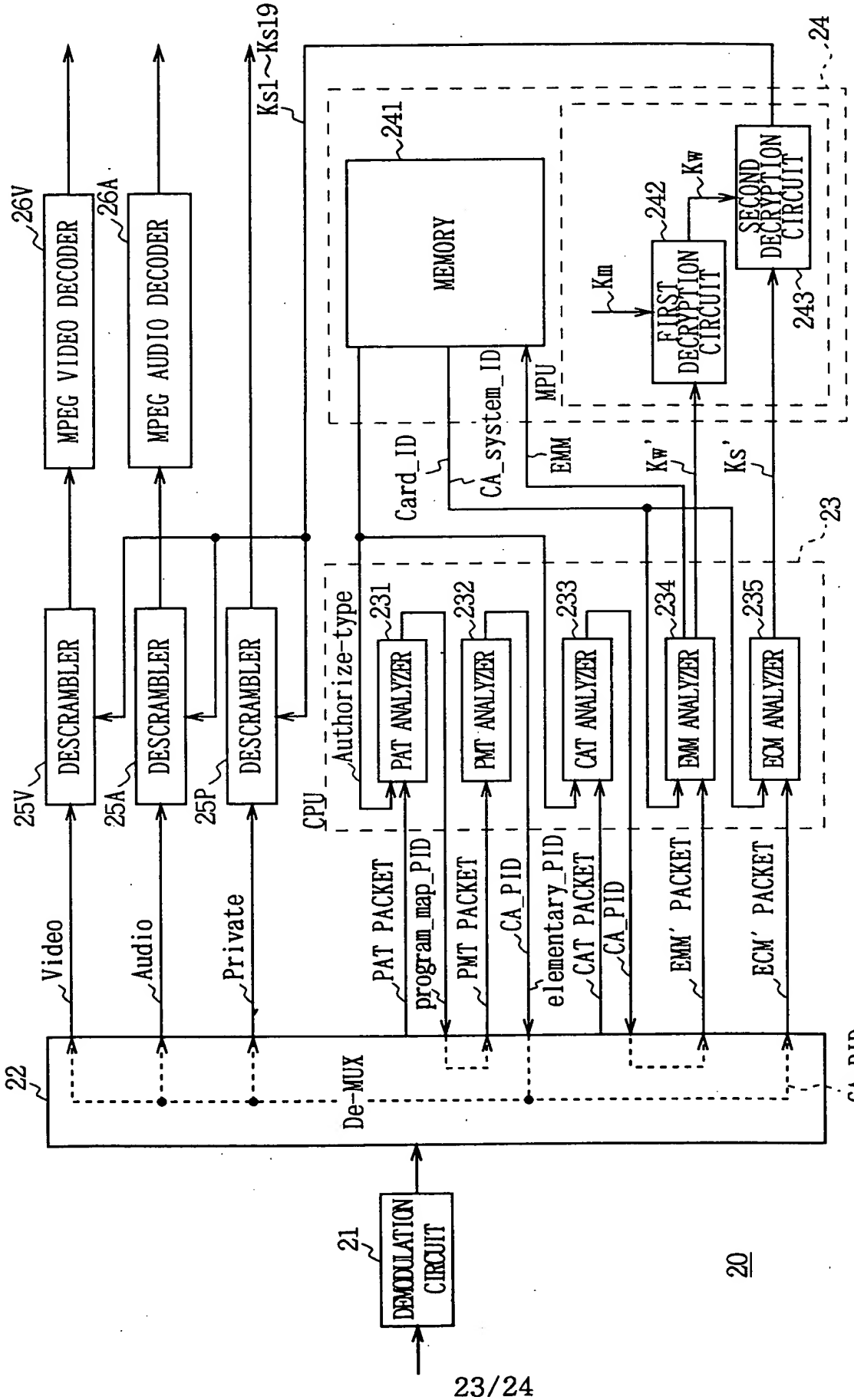

FIG. 23

DESCRIPTION OF SYMBOLS

1 ... Broadcast Data Processing System, 2 ... Subscriber Management System, 3 ... Subscriber Authorization System, 4 ... EPG system, 5 ... Server System, 6 ... Routing System, 7 ... Encoding System, 8 ... Multiplexer System, 9 ... Encoder/Multiplexer Control Unit, 10 ... Modulation Circuit, 20 ... IRD, 21 ... Demodulation Circuit, 22 ... Demultiplexer, 24 ... IC Card, 25V, 25A, 25P ... Descrambler, 26V ... MPEG Video Decoder, 26A ... MPEG Audio Decoder, 70 ... Encoding Controller, 241 ... Memory, 242 ... First Decryption Circuit, 243 ... Second Decryption Circuit, 711V through 719V ... MPEG Video Encoder, 711A through 719A ... MPEG Audio Encoder, 721 through 729 ... Multiplexing Circuit, 841 through 863 ... Buffer Memory (FIFO).